

To: Allen, HarryL[Allen.HarryL@epa.gov]; Robberson, Bill[Robberson.Bill@epa.gov]
Cc: Dunkelman, Tom[Dunkelman.Tom@epa.gov]; Cook, Anna-Marie[Cook.Anna-Marie@epa.gov]
From: Guria, Peter
Sent: Sun 8/16/2015 3:52:57 PM
Subject: RE: Lake Powell Aug 14th Update

I was asking the stupid question if the ROV could collect samples at depth.

From: Allen, HarryL
Sent: Sunday, August 16, 2015 8:46 AM
To: Robberson, Bill
Cc: Guria, Peter; Dunkelman, Tom; Cook, Anna-Marie
Subject: Re: Lake Powell Aug 14th Update

Hi guys

All this sounds great. What would the ROV tell us in this case ? I know ERT has deployed ROVs in lots of cases. Certainly we could talk to MBARI as well.

Sent from my iPhone

On Aug 16, 2015, at 8:29 AM, "Robberson, Bill" <Robberson.Bill@epa.gov> wrote:

Pete:

Regarding your query about an ROV, I find it funny that your question followed a statement about potentially tight funding!

That said, Harry has a relationship with the Monterey Bay Aquarium Research Institute (MBARI), and they have a mobile ROV package that might just do the trick! Harry and Anna-Marie and I did a tour of their facilities and vessels and ROVs, and this mobile ROV might do the trick if all the stars line-up!

As we progress in our internal discussions regarding Powell sampling, this might be a good idea.

Harry, what do you think?

Cc: Allen, HarryL

Subject: RE: Lake Powell Aug 14th Update

Tom: Thanks very much for your updates. I've included your sampling expedition info and Bill's info in my regional update. Sounds like a fun adventure to get to that remote stretch of the lake.

I'm very supportive of our participation in the USGS/NPS project. Any chance someone can provide an estimate on what our costs and resources could be? With all the resources needed for this response, funding right now could be very tight.

Question on sampling the deeper areas of the lake: does ERT or NOAA have an ROV that can be used?

From: Dunkelman, Tom

Sent: Sunday, August 16, 2015 7:50 AM

To: Robberson, Bill

Cc: Allen, HarryL; Guria, Peter

Subject: Re: Lake Powell Aug 14th Update

I agree with everything that Bill has said in previous emails regarding EPA participation in the USGS/NPS sampling expedition in Lake Powell. Given that Lake Powell is a hugely critical resource, I believe it is extremely important for EPA to evaluate potential impacts to the lake from the Gold King mine release ASAP. I have also received numerous phone calls from various agencies inquiring about the need to examine Lake Mead, although this would

seem to much of a lesser immediate need.

Yesterday and today we were able to sample the San Juan Arm and main stem of Lake Powell. While this sampling effort will hopefully provide helpful information, it was fairly limited in scope. While we were able to reach the San Juan delta there are significant gaps in our data. Our sampling tools limited us to shallow water sampling locations. As you know much of Lake Powell is several hundred feet deep and we were unable to sample these areas. We also have a relatively small number of samples locations.

I would think it critical for EPA to participate in a wider study of Lake Powell. The upcoming USGS/NPS survey would give us that opportunity and I think it would be a big mistake to miss out on that. I have not yet seen the details of their Mercury sampling program but I would think it could be modified to include priority metals to their analytical list. The goal would be to gain a better understanding of heavy metals distribution in the water column and sediment throughout Lake Powell. EPA would have to provide funding and or lab support to participate in this event however it would be money well spent as it would cost much more to do this on our own.

Over time I also think it will be critical to evaluate the San Juan River delta at the entrance to Lake Powell. This would seem to be a potential sink for contaminants released into the river system. Sediment coring in this area could shed light on contaminant releases over time. This area is very difficult to access. There is little or no road access and boat access is difficult due to shallow depths and heavy floating debris. We were able to reach this area but it was a little dicey. I am sure the USGS/NPS will not travel that far, so that is something that would have to be done independently of that effort.

I will work with Bill and Bret to submit a RR to join the USGS/NPS survey but would appreciate your support of this effort.

Sent from my iPhone

On Aug 15, 2015, at 11:32 AM, Robberson, Bill <Robberson.Bill@epa.gov> wrote:

Thanks Harry.... While the need for a RR to Farmington is well understood, the need for broader internal dialogue with you regarding the science and data picture, I believe, is what Pete was suggesting.

Please call at your convenience!

CDR William Robberson, P.E.

Regional Response Teams

EPA Region 9

San Francisco, CA

(415) 972-3072

Sent from my iPhone

On Aug 15, 2015, at 9:54 AM, Allen, HarryL <Allen.HarryL@epa.gov> wrote:

I support this but this is a resource request and tactical approach for your IC to consider. I will be able to talk but it will be a while.

Sent from my iPhone

On Aug 15, 2015, at 9:45 AM, "Robberson, Bill" <Robberson.Bill@epa.gov> wrote:

Thanks Harry...

..... just off the 0830 call and per Pete's suggestion I need to discuss with you potential integration of the upcoming two-week USGS/NPS sampling expedition on Lake Powell with our response data gathering needs.

On the face of it we would look mighty foolish to turn it down given obvious optical reasons, and on the science front it might provide us with the opportunity to establish a more solid current picture of any potentially detectable remnants of the Gold King release.

Should we decide to participate/partner, we would likely need to commit to contributing funds and/or resources, such as a person and equip and

potentially lab support. Most important is knowing what we would need out of the trip and to merge those needs with the existing trip sampling plan.... we expect to have their info probably Monday, meanwhile we need to ID our sampling objectives in order to merge them.

NPS has been very generous and accommodating to our response mission, and I urge us to first decide what we'd want out of the trip (in the way of scientific study and sampling needs to support knowledge post-incident) before we discuss any more details..... that way we can compare to their plans and needs and consider options before getting everyone excited about partnering. My guess is they will do what it takes to assist us.

Wondering if you can chat BRIEFLY today to get your input and direction.

Thanks!

CDR William Robberson, P.E.

Regional Response Teams

EPA Region 9

San Francisco, CA

(415) 972-3072

Sent from my iPhone

On Aug 15, 2015, at 12:26 AM, Allen, HarryL <Allen.HarryL@epa.gov> wrote:

Great update!

Sent from my iPhone

On Aug 14, 2015, at 11:07 PM, "Robberson, Bill"

<Robberson.Bill@epa.gov> wrote:

Lake Powell Update Friday August 14, 2015

EPA LNO Bill Robberson arrived in Page, AZ last night.

OSC Dunkelman and LNO Robberson met with Congresswoman Kirkpatrick (AZ) and staff today in two separate sessions instead of three as originally planned:

The first meeting included Congresswoman Kirkpatrick and staff; Robert Varner, Superintendent of the Page, AZ Unified School District plus its Press Officer and two members of the High School Student Body; Page City Mayor Bill Diak; Chamber of Commerce members including Executive Director Judy Franz and Congresswoman Kirkpatrick's sister, also a Page, AZ Chamber of Commerce member of its Board of Directors; and a few interested citizens including Ms. Irene Jones, a member of the Navajo Nation. The meeting went very well, with cordial discussion regarding local and regional concerns, multiple short presentations by Dunkelman and Robberson, authentic Q&As and an expressed appreciation for the work that EPA is doing to protect the people, the environment and the economy of the area.

The second meeting with Congresswoman Kirkpatrick took place at the Antelope Point Marina on Lake Powell, with two representatives of the NPS Glen Canyon National Recreation Area and three representatives of the resort and sport fishing industry on Lake Powell. This meeting also went very well with one-on-one conversations and group discussions regarding long and short term business concerns and short presentations by Dunkelman and Robberson explaining the nature of the situation and related EPA sampling efforts. The meeting was followed with photo-ops by the Congresswoman's Twitter and Facebook documentation staff.

Late this afternoon OSC Dunkelman and two START contractors departed on a NPS vessel for the first leg of travel up Lake Powell. Their objective is to reach the San Juan Arm of Lake Powell sometime tomorrow, where they will initiate sampling of sediment and surface water samples beginning at the point where the San Juan River enters confluences of Lake Powell. As mentioned previously the NPS has been very supportive of EPA Lake Powell Branch activities during this response, including their hosting of EPA's satellite ICP, our lodging in Page and on Lake Powell, and their contribution of this vessel and an operator to support this effort. The plan is to collect surface water samples along the main axis of Lake Powell upon their return to Page late Saturday and early Sunday. This sampling effort is expected to continue from today (Friday) through Sunday afternoon.

Additionally, there is a pre-existing sampling expedition planned by USGS and NPS that is scheduled to begin August 19. This joint sampling event is scheduled to last one to two weeks and is presently focused on evaluating mercury distribution throughout the water column and sediments of Lake Powell. At this point in time it makes sense to have this sampling event expanded to include analytes related to the Gold King Mine response. OSC Dunkelman and LNO Robberson are working closely with NPS to identify the details necessary to potentially integrate EPA response sampling needs with those of the expedition. This may also present an opportunity for EPA personnel to participate in the extended sampling expedition.

The Utah Department of Environmental Quality provides an update on their website at <http://www.deq.utah.gov/Topics/Water/goldkingmine/index.htm>. The most recent update states "DOH does not expect that recreational or agricultural use of the San Juan River will result in adverse effects in people, livestock, or crops. It is still recommended that recreational users carry their own drinking water and not rely on filtering or purifying river waters." Language was added today stating, "The Utah Department of Agriculture and Food (UDAF) continues to advise agricultural producers along the San Juan River in Utah to avoid using river water as an irrigation and livestock watering source."

Utah has scheduled a coordination call between local, state, federal, and tribal partners for each morning at 8:00 a.m. MDT to discuss the mine-water contamination of the Animas and San Juan Rivers in CO/UT and its potential impacts to Utah, to establish the public health messaging for the event, as well as to establish criteria upon which an "all clear" signal can be given for unrestricted use of the potentially impacted waters. The call in number is 1-977-820-7831, passcode: 665806#. They would like an EPA representative who is willing to speak for EPA regarding the analysis and conclusions of its Water Quality sampling data.

The Arizona Department of Water Quality has collected samples in Glen Canyon and anticipates having results early next week.

LNO Robberson assisted NPS Glen Canyon National Recreation Area (GCNRA) in development of updates on its Website and Park "Phone Hot line", and NPS has also posted links to the Utah DEQ and US EPA incident websites.

Congressman Rob Bishop will be visiting Glen Canyon on Monday. This trip was scheduled prior to the Gold King Mine incident and will provide an opportunity for the NPS and EPA to provide an update. EPA Lake Powell Branch representatives

Dunkelman and Robberson have been invited and encouraged by NPS GCNRA Superintendent Todd Brindle to participate.

In addition to the agencies and individuals mentioned above, today OSC Dunkelman and LNO Robberson have also worked closely with the NPS Resources Director and PIO in coordinated with USGS, City of Page Utilities, ADEQ, AZ Geological Survey, Utah DWQ, Utah DEM, Utah DNR, IHS, ATSDR, Coconino County Public Health and Coconino County PIO.

The issue remains regarding who or what agency is or will be willing to make a definitive statement regarding the water quality of Lake Powell... specifically if and when it might be safe for drinking and for recreation contact.

<August 14 LNO Update.docx>